



## WISCONSIN'S GOLFERS DONATE TO TURFGRASS RESEARCH

Gene Haas, Executive Director of the Wisconsin State Golf Association, presented checks for turfgrass research from Wisconsin golfers to the O. J. NOER RESEARCH FOUNDATION and to the WISCONSIN TURFGRASS ASSOCIATION. The presentations were made at the WGCSA's September meeting at Milwaukee Country Club.

The gifts to turfgrass research were particularly significant because they represent the recognition that end users — in this case, the golfer — of such research have an important role to play if we are to keep our industry healthy, current and progressive. The idea of garnering the support of the ultimate benefactors led to the launching of the USGA Foundation's plan of asking for \$2.00 for each golfing membership from golf clubs around the country. The idea prompted some of Wisconsin's golf clubs to donate either \$0.01 per round of golf in 1984 or \$1.00 per golfing member this year to the Wisconsin Turfgrass Association for turfgrass research at the University of Wisconsin — Madison. The potential for this kind of broadly based "user" support is almost limitless, and generous and concerned gestures like this one by Gene Haas and the WSGA go a long way in setting an important and long overdue precedent.

Thanks to Wisconsin's golfers!

## UW researchers studying risks of plant chemicals

A group of valuable agricultural chemicals through to affect only plants have now been shown to alter the immune response of animals.

University of Wisconsin-Madison researchers Ronald Hindsill and John Olson found that several plant growth regulators (PGRs) can suppress or alter animals' ability to make the appropriate immune response.

Hindsill cautions, however, that the results cannot be extrapolated directly to humans.

"We're not trying to scare anyone, but we're saying that these chemicals are not just active in plants and that more research is needed," Hindsill says. "We need to be aware that certain groups, such as field applicators and chemical plant workers, may be at higher risk and should be carefully monitored."

An animal or person with a suppressed immune response has a more difficult time fighting infection and disease. Hindsill and Olson found that four plant growth regulators — maleic hydrazide, cycloheximide, chlorocholine chloride, and glyphosine — changed the immune responses of mice.

PGRs are an increasingly important group of chemicals used to alter the growth and development of plants. Maleic hydrazide prevents sprouting in stored potatoes and onions, and glyphosine and cycloheximide both make oranges drop off the trees for easy harvesting.

Hindsill, chairman of the bacteriology department and former director of the UW-Center for Environmental toxicology, became interested in PGRs when, glancing through an agri-chemical journal, he noticed that the chemical structures of some PGRs had highly reactive groups — as does nitrogen mustard, a known immune response suppressor.

Hindsill and his group decided to study the four chemicals because they are all widely used and have those suspicious reactive groups.

The researchers mixed the chemicals with the mices' feed

and injected them into the mice. They found that the chemicals changed the weights of some immune system organs and affected the level of antibody production.

Hindsill says that the relationship between PGRs and human health is speculative. In the maleic hydrazide experiments, for example, a high-dose mouse received 300 times the dose a human would eat on a half pound of potatoes.

"But," he continues, "we don't know if the mouse is a very sensitive system. Systems we can't test, the human fetus for example, may be even more sensitive."

Hindsill says that chemical safety tests should include analysis of the product's effect on immune response. As for PGRs, he proposes first learning if the immune system is affected, next studying the mechanism of the effect and then testing people with known high-dose PGR exposure to see if they exhibit any of the effects.

"We can't go back to the dark ages," Hindsill says. "Today chemical manipulation of crops is essential. But we must be ware of the biological consequences of what work we work with so we can alleviate any damage."

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